#### => d his

```
(FILE 'HOME' ENTERED AT 13:50:48 ON 12 DEC 2002)
     FILE 'REGISTRY' ENTERED AT 13:51:11 ON 12 DEC 2002
                STRUCTURE UPLOADED
L1
L2
             50 S L1
          17524 S L1 FUL
L3
     FILE 'CAPLUS' ENTERED AT 13:51:58 ON 12 DEC 2002
L4
           3315 S L3
L5
          73675 S DIABETE?
L6
           720 S L5 AND L4
          73653 S DIABETES
L7
L8
           720 S L7 AND L4
          24101 S L7/TI
Ь9
            222 S L9 AND L4
L10
     FILE 'REGISTRY' ENTERED AT 14:00:47 ON 12 DEC 2002
                STRUCTURE UPLOADED
L11
             10 SEARCH L11 SSS SUB=L3 FUL
L12
     FILE 'REGISTRY' ENTERED AT 14:04:00 ON 12 DEC 2002
L13
              2 S L12
     FILE 'CAPLUS' ENTERED AT 14:04:52 ON 12 DEC 2002
=> s 112
L14
             4 L12
=> s l14 and l7
             4 L14 AND L7
=> d bib abs hitstr 1-4
L15 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS
     2002:185699 CAPLUS
AN
     136:247571
DN
     Preparation of novel heterocyclic analogs of diphenylethylene compounds as
TI
     inhibitors of cytokines or cyclooxygenase
IN
     Nag, Bishwajit; Dey, Debendranath; Medicherla, Satyanarayana; Neogi,
     Partha
PA
     U.S. Pat. Appl. Publ., 34 pp., Cont.-in-part of U.S. Ser. No. 785,554.
SO
     CODEN: USXXCO
DT
     Patent
     English
LΑ
FAN.CNT 5
                     KIND DATE
                                           APPLICATION NO. DATE
     PATENT NO.
     -----
                                                              -----
                                            -----
                       A1
                                            US 2001-843167 20010427
PΙ
     US 2002032225
                             20020314
     US 6245814
                       B1
                             20010612
                                            US 1998-74925
                                                              19980508
                     A1
A2
                                            US 2001-785554
     US 2002025975
                             20020228
                                                               20010220
                           20011220
                                            WO 2001-US17950 20010605
     WO 2001095859
         W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
             CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
             GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
             RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,
         UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,
```

DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,

IΤ

RN

CN

(9CI) (CA INDEX NAME)

compds. are disclosed as useful for a variety of treatments including the treatment of inflammation, inflammatory and immunol. diseases, insulin resistance, hyperlipidemia, coronary artery disease, cancer and multiple sclerosis. Thus, To a mixt. of 3,5-dimethoxybenzaldehyde (500 g) and p-hydroxyphenylacetic acid (457 g) was added acetic anhydride (1 L) and triethylamine (420 mL) and the nonhomogeneous mixt. on heating became homogeneous at 70.degree. and stirred at 130-140.degree. for 6 h to give 47% 3-(3,5-dimethoxyphenyl)-2-(4-hydroxyphenyl)acrylic acid (II) (428 g). II (427.5 g) was suspended in 3 L methanol, treated with 100 mL concd. H2SO4, and heated at reflux for 20 h under Ar to give 97% 3-(3,5-dimethoxyphenyl)-2-(4-hydroxyphenyl)acrylic acid Me ester (III). III (433 g) was dissolved in 1.6 L DMF, treated with 60.4 g NaH (50% in oil) and the with 185 mL p-fluorobenzaldehyde, and heated at 180.degree. for 18 h to give 77% 3-(3,5-dimethoxyphenyl)-2-[4-(4formylphenoxy)phenyl]acrylic acid Me ester which (352 g), 2,4-thiazolidinedione 98.6, benzoic acid 134, and piperidine 107.4 q were heated in 2.5 L toluene at reflux with continuous removal of H2O through Dean-Stark app. to give 86% 3-(3,5-dimethoxyphenyl)-2-[4-[4-(2,4dioxothiazolidin-5-ylidenemethyl)phenoxy[phenyl]acrylic acid Me ester IV (30 g) was hydrogenated over 15 g 10% Pd-C in 900 mL dioxane in a Parr app. at 60 Psi for 24 h, followed by adding 15 g 10% Pd-C and continuing the hydrogenation for another 24 h to give 86% 3-(3,5-dimethoxyphenyl)-2-[4-[4-(2,4-dioxothiazolidin-5ylmethyl)phenoxy]phenyl]acrylic acid Me ester (V). When V was orally administered to ob/ob mice with a single oral dose (50 mg/kg body wt.), there was a 62 % drop in blood glucose level and, similar to db/db mice, there was no significant increase in body wt. between the control and the treatment groups. This was in contrast to treatment of diabetic animals by thiazolidinedione type compds. which are known to be assocd. with increase in body wt. 380881-47-0P, 3-(3,5-Dimethoxyphenyl)-2-[4-[4-(2,4dioxothiazolidin-5-ylidenemethyl)phenoxy]phenyl]propionic acid methyl ester 380881-49-2P, 3-(3,5-Dimethoxyphenyl)-2-[4-[4-(2,4dioxothiazolidin-5-ylmethyl)phenoxy]phenyl]propionic acid 380881-51-6P, 3-(3,5-Dimethoxyphenyl)-2-[4-[4-(2,4dioxothiazolidin-5-ylmethyl)phenoxy]phenyl]propionic acid methyl ester 380881-53-8P, 3-(3,5-Dimethoxyphenyl)-2-[4-[4-(2,4dioxothiazolidin-5-ylidenemethyl)phenoxy]phenyl]propionic acid RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (prepn. of novel heterocyclic analogs of phenylethylene compds. as inhibitors of cytokines or cyclooxygenase for therapeutic agents) 380881-47-0 CAPLUS Benzenepropanoic acid, .alpha.-[4-[4-[(2,4-dioxo-5-

thiazolidinylidene)methyl]phenoxy]phenyl]-3,5-dimethoxy-, methyl ester

RN 380881-49-2 CAPLUS

CN Benzenepropanoic acid, .alpha.-[4-[4-[(2,4-dioxo-5-thiazolidinyl)methyl]phenoxy]phenyl]-3,5-dimethoxy- (9CI) (CA INDEX NAME)

RN 380881-51-6 CAPLUS

CN Benzenepropanoic acid, .alpha.-[4-[4-[(2,4-dioxo-5-thiazolidinyl)methyl]phenoxy]phenyl]-3,5-dimethoxy-, methyl ester (9CI) (CA INDEX NAME)

RN 380881-53-8 CAPLUS

CN Benzenepropanoic acid, .alpha.-[4-[4-[(2,4-dioxo-5-thiazolidinylidene)methyl]phenoxy]phenyl]-3,5-dimethoxy- (9CI) (CA INDEX NAME)

```
L15
    ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS
AN
    2001:923567 CAPLUS
DN
    136:37596
TI
    Preparation and activity of diphenylethylene thiazolidinedione or
    oxazolidinedione compounds as antidiabetics or antiinflammatories
    Neogi, Partha; Nag, Bishwajit; Medicherla, Satyanarayana; Dey,
IN
    Debendranath
    Calyx Therapeutics, Inc., USA
PA
    PCT Int. Appl., 76 pp.
so
    CODEN: PIXXD2
DT
    Patent
LA
    English
FAN.CNT 5
    PATENT NO.
                     KIND DATE
                                         APPLICATION NO. DATE
                    ----
                                         -----
PΙ
    WO 2001095859
                     A2
                           20011220
                                        WO 2001-US17950 20010605
        W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,
            CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,
            GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,
            LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT,
            RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US,
            UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
```

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,

```
DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,
             BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG
     US 2002025975
                             20020228
                                                              20010220
                       A1
                                            U$ 2001-785554
    US 2002032225
                       A1
                             20020314
                                            US 2001-843167
                                                              20010427
    AU 2001066670
                       A5
                             20011224
                                            AU 2001-66670
                                                              20010605
PRAI US 2000-591105
                       A2
                             20000609
    US 2001-785554
                       A2
                             20010220
    US 2001-843167
                       A2
                             20010427
                       A2
    US 1998-74925
                             19980508
                       A2
    US 1999-287237
                             19990406
    WO 2001-US17950
                       W
                             20010605
os
    MARPAT 136:37596
GI
```

AB Novel diphenylethylene compds. and derivs. thereof contg. thiazolidinedione or oxazolidinedione moieties are provided which are effective in lowering blood glucose level, serum insulin, triglyceride and free fatty acid levels in animal models of Type II diabetes. In contrast to previously reported thiazolidinedione compds., known to lower leptin levels, the present compds. increase leptin levels and have no known liver toxicity. Thus, (I) was prepd. in five steps by condensation of 3,5-dimethoxybenzaldehyde with 4-hydroxyphenylacetic acid followed by esterification and etherification with 4-fluorobenzaldehyde and condensation with 2,4-thiazolidinedione and hydrogenation of the ylidene double bond. Oral administration of I to obese mice caused a 62% drop in blood glucose level. The compds. are disclosed as useful for a variety of treatments including the treatment of inflammation, inflammatory and immunol. diseases, insulin resistance, hyperlipidemia, coronary artery disease, cancer and multiple sclerosis.

IT 380881-47-0P 380881-49-2P 380881-51-6P 380881-53-8P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. and activity of diphenylethylene thiazolidinedione or oxazolidinedione compds. as antidiabetics or antiinflammatories) 380881-47-0 CAPLUS

RN 380881-47-0 CAPLUS
CN Benzenepropanoic acid, .alpha.-[4-[4-[(2,4-dioxo-5-thiagolidinylidene)methyllphonoxylphonyl]-2 5-dimethoxy-

thiazolidinylidene)methyl]phenoxy]phenyl]-3,5-dimethoxy-, methyl ester (9CI) (CA INDEX NAME)

RN 380881-49-2 CAPLUS

CN Benzenepropanoic acid, .alpha.-[4-[4-[(2,4-dioxo-5-thiazolidinyl)methyl]phenoxy]phenyl]-3,5-dimethoxy- (9CI) (CA INDEX NAME)

### L30 ANSWER 1 OF 1 REGISTRY COPYRIGHT 2003 ACS

## \*\*PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT\*\*

CN 2,4-Thiazolidinedione, 5-[[3,5-bis(1,1-dimethylethyl)-4-hydroxyphenyl]methylene]- (9CI) (CA INDEX NAME)
OTHER NAMES:

CN 5-(3,5-Di-tert-butyl-4-hydroxybenzylidene)thiazolidine-2,4-dione CN CI 987

RN 380881-51-6 CAPLUS

CN Benzenepropanoic acid, .alpha.-[4-[4-[(2,4-dioxo-5-thiazolidinyl)methyl]phenoxy]phenyl]-3,5-dimethoxy-, methyl ester (9CI) (CA INDEX NAME)

RN 380881-53-8 CAPLUS

CN Benzenepropanoic acid, .alpha.-[4-[4-[(2,4-dioxo-5-thiazolidinylidene)methyl]phenoxy]phenyl]-3,5-dimethoxy- (9CI) (CA INDEX NAME)

L15 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS

1996:537366 CAPLUS AN

DN 125:195674

Preparation of 2,4-dioxo-1,2,3,4-tetrahydroquinazoline derivatives having ΤI blood sugar-lowering and aldose reductase-inhibiting activity

IN Myaoka, Shozo; Sato, Hiroko; Matsushima, Hiroaki; Sugizaki, Myoshi

PA Terumo Corp, Japan

Jpn. Kokai Tokkyo Koho, 33 pp. SO

CODEN: JKXXAF

DTPatent

LA Japanese

FAN.CNT 1

PATENT NO. KIND DATE APPLICATION NO. DATE ---------------ΡI JP 08143566 JP 1994-291053 19941125 A2 19960604 MARPAT 125:195674

os

GI

#### CAS ONLINE PRINTOUT

The title compds. [I; R3, R4 = H, halo, lower alkyl, lower alkoxy, AB haloalkyl; R1, R2 = R5-CO2R6, CH2C6H4-A-T, (CH2)m-B-T; wherein R5 = C1-3 alkylene; R6 = H, C1-8 alkyl; A = CH2, 1,2-, 1,3-, or 1,4-NHSO2C6H4CH2, -CH2CH2C6H4CH2, or -CH:CHC6H4CH2; T = heterocyclyl having weakly acidic H; m = 1-7; B = NHSO2-C6H4-CH2], which are useful for the treatment of diabetes complications such as cataract, retinopathy, or nerve or kidney disorders, are prepd. Thus, Et 2,4-dioxo-2H-3,1-benzoxazine-1(4H)acetate, 4-nitrobenzyl amine hydrochloride, and Et3N were suspended in toluene and stirred at 100.degree. for 2.5 h to give Et [2-[N-(4-nitrobenzyl)carbamoyl]phenylamino]acetate, which was cyclocondensed with 1,1'-carbonyldiimidazole at 130.degree. for 2 h to I (R1 = 4-nitrobenzyl, R2 = CH2CO2Et, R3 = R4 = H), diazotized with NaNO2 in HBr/aq. acetone at 5.degree., and coupled with Et acrylate in the presence of Cu2O at 30.degree. to give I (R1 = Q, R2 = CH2CO2Et, R3 = R4 = H). The latter compd. was cyclocondensed with thiourea in the presence of AcONa in ethanol under reflux for 6 h to I (R1 = Q1, wherein Z = NH, R2 = CH2CO2Et, R3 = R4 = H), which was hydrolyzed in 2 N aq. HCl under reflux to give I (R1 = Q1, wherein Z = O, R2 = CH2CO2Et, R3 = R4 = H) and I (R1 = Q1, wherein Z = O, R2 = CH2CO2Et, R3 = R4 = H)wherein Z = O, R2 = CH2CO2H, R3 = R4 = H). I (R1 = Q2, R2 = CH2CO2H, R3 = CH2CO2H)7-Cl, R4 = H) and I (R1 = Q3, R2 = CH2CO2H, R3 = R4 = H) in vitro showed IC50 of 3.34 .times. 10-8 and 2.13 .times. 10-6 M, resp., against aldose reductase, and at 100 mg/kg/day p.o. for 2 days in vivo lowered blood sugar by 13 and 36%, resp.

IT 180632-29-5P 180632-30-8P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(prepn. of dioxotetrahydroquinazoline derivs. having blood sugar-lowering and aldose reductase-inhibiting activity for treating diabetes complications)

RN 180632-29-5 CAPLUS

CN

1(2H)-Quinazolineacetic acid, 3-[[4-[2-[4-[(2,4-dioxo-5-thiazolidinyl)methyl]phenyl]ethyl]phenyl]methyl]-3,4-dihydro-2,4-dioxo-, ethyl ester (9CI) (CA INDEX NAME)

$$\begin{array}{c|c} & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\ & & & \\$$

RN 180632-30-8 CAPLUS

CN 1(2H)-Quinazolineacetic acid, 3-[[4-[2-[4-[(2,4-dioxo-5-thiazolidinyl)methyl]phenyl]ethyl]phenyl]methyl]-3,4-dihydro-2,4-dioxo-(9CI) (CA INDEX NAME)

$$\begin{array}{c|c} CH_2-CO_2H \\ \hline \\ N \\ \hline \\ O \\ \end{array}$$

L15 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2002 ACS

AN 1992:255519 CAPLUS

DN 116:255519

TI Novel thiazolidine-2,4-diones as potent euglycemic agents.

AU Hulin, Bernard; Clark, David A.; Goldstein, Steven W.; McDermott, Ruth E.; Dambek, Paul J.; Kappeler, Werner H.; Lamphere, Charles H.; Lewis, Diana M.; Rizzi, James P.

CS Pfizer Inc., Groton, CT, 06340, USA

SO Journal of Medicinal Chemistry (1992), 35(10), 1853-64 CODEN: JMCMAR; ISSN: 0022-2623

DT Journal

LA English

GΙ

An ew series of thiazolidine-2,4-diones I [R = H, Z = O, X = (CH2)n, (n = 1, 2, 3), OCH2, CH:CH; R = 4-PhCH2O, 4-Ph, 2-MeO, 4-MeO, Z = O, X = CH2CH2; R = H, Z = H2 or H,OH, X = CH2CH2; R = 4-PhCH2O, 2-MeO, 2-Cl, 2-CF3, 2-PhCH2, 3-Cl, 4-Br, 4-EtO2C, 4-Ph, 2-HO, 2-Me, 4-MeOCH2, 4-MeO, 4-Me2N, Z = O, X = CH:CH] was obtained by replacing the ether function of englitazone with various functional groups, i.e., a ketone, alc., or olefin moiety. These compds. lower blood glucose levels in the genetically obese and insulin-resistant ob/ob mouse. Appending an oxazole-based group at the terminus of the chain provided highly potent compds., e.g. II [R1 = Ph, 4-MeC6H4, R2 = Me, H; R1 = 4-MeOC6H4, 4-CF3C6H4, 4-HOC6H4, 3,5,4-Me2(MeO)C6H2, 3,5,4-Me2(HO)C6H2, 2-furyl, 2-(5-methylfuryl), 2-HSC6H4, 2-naphthyl, R2 = Me].

II

IT 141200-90-0P

RL: SPN (Synthetic preparation); PREP (Preparation) (prepn. and condensation of, with thiazolidinedione)

RN 141200-90-0 CAPLUS

#### CAS ONLINE PRINTOUT

IT 141200-92-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and conjugate redn of, in prepn. of euglycemics)

RN 141200-92-2 CAPLUS

CN 2,4-Thiazolidinedione, 5-[[4-(1-hydroxy-2-phenylethyl)phenyl]methyl]-, (R\*,S\*)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

IT 141200-91-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(prepn. and conjugate redn. of, in prepn. of euglycemics)

RN 141200-91-1 CAPLUS

CN 2,4-Thiazolidinedione, 5-[[4-(1-hydroxy-2-phenylethyl)phenyl]methyl]-, (R\*,R\*)- (9CI) (CA INDEX NAME)

Relative stereochemistry.

IT 141199-89-5P

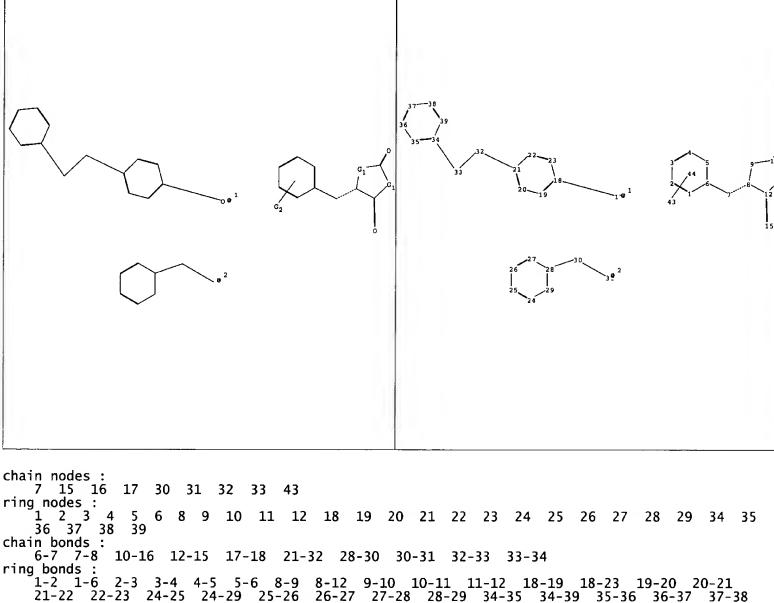
RL: SPN (Synthetic preparation); PREP (Preparation)
 (prepn. and euglycemic activity of)

RN 141199-89-5 CAPLUS

CN 2,4-Thiazolidinedione, 5-[[4-(phenylacetyl)phenyl]methyl]- (9CI) (CA INDEX NAME)

# CAS ONLINE PRINTOUT

=>



chain bonds :
 6-7 7-8 10-16 12-15 17-18 21-32 28-30 30-31 32-33 33-34

ring bonds :
 1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-12 9-10 10-11 11-12 18-19 18-23 19-20 20-21 21-22 22-23 24-25 24-29 25-26 26-27 27-28 28-29 34-35 34-39 35-36 36-37 37-38 38-39

exact/norm bonds :
 6-7 7-8 8-9 8-12 9-10 10-11 10-16 11-12 12-15 17-18 21-32 28-30 30-31 32-33 33-34

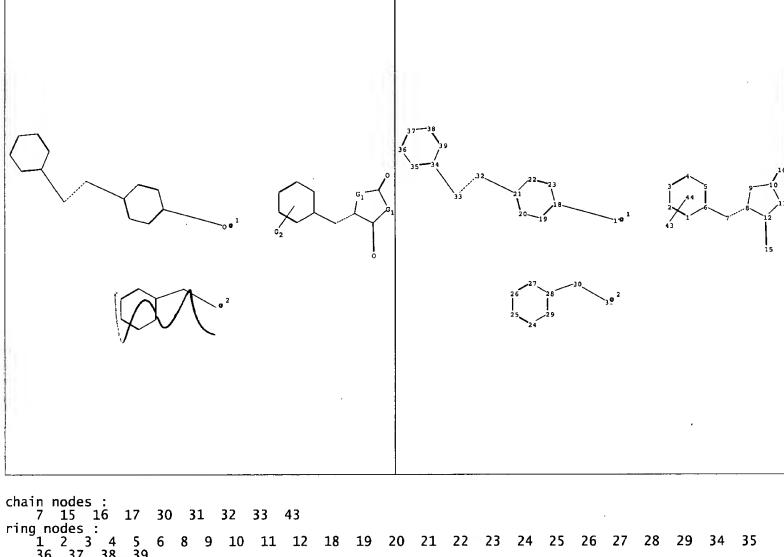
normalized bonds :
 1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23 24-25 24-29 25-26 26-27 27-28 28-29 34-35 34-39 35-36 36-37 37-38 38-39

G1:0,S,N

G2:[\*1],[\*2]

C:\STNEXP4\QUERIES\843.str

Match level:
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 15:CLASS 16:Atom 17:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:CLASS 31:CLASS 32:CLASS 33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 43:CLASS 44:CLASS



```
ring nodes:

1 2 3 4 5 6 8 9 10 11 12 18 19 20 21 22 23 24 25 26 27 28 29 34 35 36 37 38 39

chain bonds:

6-7 7-8 10-16 12-15 17-18 21-32 28-30 30-31 32-33 33-34

ring bonds:

1-2 1-6 2-3 3-4 4-5 5-6 8-9 8-12 9-10 10-11 11-12 18-19 18-23 19-20 20-21 21-22 22-23 24-25 24-29 25-26 26-27 27-28 28-29 34-35 34-39 35-36 36-37 37-38 38-39

exact/norm bonds:

6-7 7-8 8-9 8-12 9-10 10-11 10-16 11-12 12-15 17-18 21-32 28-30 30-31 32-33 33-34

normalized bonds:

1-2 1-6 2-3 3-4 4-5 5-6 18-19 18-23 19-20 20-21 21-22 22-23 24-25 24-29 25-26 26-27 27-28 28-29 34-35 38-39
```

G1:0,S,N

G2:[\*1],[\*2]

C:\STNEXP4\QUERIES\843.str

Match level:
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:CLASS 8:Atom 9:Atom 10:Atom 11:Atom 12:Atom 15:CLASS 16:Atom 17:CLASS 18:Atom 19:Atom 20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom 29:Atom 30:CLASS 31:CLASS 32:CLASS 33:CLASS 34:Atom 35:Atom 36:Atom 37:Atom 38:Atom 39:Atom 43:CLASS 44:CLASS